

CLAIMS

1. A method comprising:
generating a computer-aided design (CAD) drawing file including a desired contactless smart card design, said CAD drawing file including information description of desired card features,
accessing the information in the CAD drawing file; and
controlling a robotic system to produce one or more of said desired feature using the accessed information.
2. The method of claim 1, wherein the information comprises positional information in a Cartesian coordinate system.
3. The method of claim 1, wherein the information comprises a desired location for a corresponding feature.
4. The method of claim 1, wherein the information comprises the dimensions of the of a corresponding feature.
5. The method of claim 1, wherein the information includes parameters for an operation.

6. The method of claim 5, wherein said parameters include a speed value, an ultrasonic energy value, and a pressure value for controlling a wire antenna implanting apparatus.

7. The method of claim 6, wherein the feature comprises a wire antenna pattern and the information comprises a size and a shape of the wire and a number of windings.

8. The method of claim 1, wherein said controlling a robotic system comprises controlling a robotic system including a wire implanting apparatus operative to stake a wire antenna in a card substrate.

9. The method of claim 1, wherein said controlling a robotic system comprises controlling a pick-and-place robot operative to place an integrate circuit (IC) module in a hole in the card substrate.

10. The method of claim 9, wherein the information includes the length and width of the IC module in the card substrate and a desired location of the IC module in the card substrate.

11. The method of claim 1, wherein said controlling a robotic system comprises controlling a robotic system including a welding apparatus operative to bond ends of the wire antenna to contact tabs on an IC module.

12. The method of claim 11, wherein the information includes a desired position of the bonds.

13. The method of claim 1, further comprising:

modifying the CAD drawing file, said CAD drawing file including modified information description of at least one new desired card feature,

accessing the modified information in the CAD drawing file; and

controlling a robotic system to produce said new desired feature using the accessed information.

14. A robotic system controller comprising:

a display screen;

input means;

a CAD module operative to enable a user to generate a CAD drawing on the display screen and a corresponding CAD drawing file using said input means, said drawing file including information description of desired card features;

a memory device operative to store the CAD drawing file; and

a controller operative to access said information in the CAD drawing file and control a robotic system to produce one or more of said desired feature using the accessed information.

15. The robotic system controller of claim 14, wherein the information comprises a desired location for a corresponding feature.

16. The robotic system controller of claim 14, wherein the information comprises the dimensions of the of a corresponding feature.

17. The robotic system controller of claim 14, wherein the controller is further operative to control a robotic system including a wire implanting apparatus operative to stake a wire antenna in a card substrate.

18. The robotic system controller of claim 14, wherein the controller is further operative to control a pick-and-place robot operative to place an integrate circuit (IC) module in a hole in the card substrate.

19. The robotic system controller of claim 14, wherein the controller is further operative to control a robotic system including a welding apparatus operative to bond ends of the wire antenna to contact tabs on an IC module.

20. An article comprising a machine-readable medium including machine-operable instructions, the instructions operative to cause a machine to:

generate a computer-aided design (CAD) drawing file including a desired contactless smart card design, said CAD drawing file including information description of desired card features,

access the information in the CAD drawing file;
and

control a robotic system to produce one or more of said desired feature using the accessed information.

21. The article of claim 20, wherein the information comprises positional information in a Cartesian coordinate system.

22. The article of claim 20, wherein the information comprises a desired location for a corresponding feature.

23. The article of claim 20, wherein the information comprises the dimensions of the of a corresponding feature.

24. The article of claim 20, wherein the information includes parameters for an operation.

25. The article of claim 24, wherein said parameters include a speed value, an ultrasonic energy value, and a pressure value for controlling a wire antenna implanting apparatus.

26. The article of claim 25, wherein the feature comprises a wire antenna pattern and the information comprises a size and a shape of the wire and a number of windings.

27. The article of claim 20, wherein the instructions for controlling a robotic system further comprise instructions causing the machine to control a robotic system including a wire implanting apparatus operative to stake a wire antenna in a card substrate.

28. The article of claim 20, wherein the instructions for controlling a robotic system further comprise instructions causing the machine to control a pick-and-

place robot operative to place an integrate circuit (IC) module in a hole in the card substrate.

29. The article of claim 28, wherein the information includes the length and width of the IC module in the card substrate and a desired location of the IC module in the card substrate.

30. The article of claim 20, wherein the instructions for controlling a robotic system further comprise instructions causing the machine to control a robotic system including a welding apparatus operative to bond ends of the wire antenna to contact tabs on an IC module.

31. The article of claim 30, wherein the information includes a desired position of the bonds.

32. The article of claim 20, further comprising instructions operative to cause the machine to:

 modify the CAD drawing file, said CAD drawing file including modified information description of at least one new desired card feature,

 access the modified information in the CAD drawing file; and

control a robotic system to produce said new
desired feature using the accessed information.